Photo-Magnetic Range Extension of Conventional Artillery Using High-Intensity Helical LASER Light

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Introduction

A major shortcoming of conventional artillery is its limited range (about 30 miles.) If an entity were to suddenly gain the ability to fire artillery shells over about double this range, it would fundamentally alter the tactical situation on the ground. Electromagnetic rail guns were an attempt to extend the range of artillery, but these weapons require extreme amounts of energy and barrels which are too long for manufacture or deployment to be practical. Furthermore, the guidance circuitry in a guided munition would not function after being subjected to such a magnetic field as is generated by an electromagnetic rail gun.

Abstract

The fundamental mechanism used in photo-magnetic propulsion (ibid.) may be applied to artillery without the need for an artillery shell to carry its own energy source provided the ability to remotely convey sufficient energy to provide an extended boost period which could be made to serve as a "virtual barrel." The emplacement of a PoMP mechanism on the rear of a guided artillery shell, when coupled with the emission of helical light (the prism to enable this having already been promulgated by this author) from a LASER ground station would enable a given entity to employ a high-intensity helical beam to provide supplementary thrust to an artillery shell in the moments after it is fired from an artillery unit using conventional propellants. Wheres such a LASER system would ordinarily be used to attempt to destroy an incoming munition prior to its arrival, this directed energy beam would be fired at the rear facade of an outgoing munition.

So long as the rear of the shell is visible from the launch site, a LASER could be made to strike the rear of the shell as it travels away. An ordinary LASER would not deliver meaningful amounts of energy to the shell due to atmospheric scattering, however, a helical beam would experience negligible scattering and could deliver its full energy to the shell irrespective of distance. The shell, not needing to provide its own energy in the form of chemical or electrical thrust, would be accelerated by this light as it travels away, causing the projectile to main or, perhaps, to increase in velocity rather than being slowed by atmosphere. Although atmospheric drag would continue to exist, a light-boosted munition could be expected to travel at least double the distance of a conventional artillery shell. When the ingredient of guidance is added, these shells could unleash devastating effects with high accuracy against targets in excess of 60 miles away. The greater an altitude is reached, the thinner the atmosphere becomes and the more benefit can be gained. In theory, this method

could be used to fire an artillery shell into Earth's orbit, making the range essentially limitless, although this would require extreme quantities of electrical energy.

The helical LASER system would require a highly accurate optical tracking mechanism to ensure a continual lock on the shell after launch and sufficient power to generate meaningful propulsive effects upon interaction with actuating layers (polarity uniforming, solitonization and actuative.) Unlike an electromagnetic rail gun, which must accelerate an object sufficiently to overcome exponentially increasing atmospheric drag prior to the object's escape from the barrel, this more gradual acceleration (more accurately, *the prevention of deceleration through kinetic support from a distance*) provides for a more efficient utilization of energy and does not have the same onerous requirements for electrical energy as a rail gun.

Although the LASER systems would be costly, only one LASER unit would be required to support a cluster of artillery units. Further money could be saved by employing a guidance mechanism previously promulgated by this author which requires no moving parts (ibid.) in lieu of fins. That mechanism, much like the eENZ/nanosphere/copper mechanism can be appended to existing artillery shells and does not require that entirely novel units be created (much like the revolutionary JDAM kits.)

For guidance, a material layer is added to the frontus of the shell which features the ability to be resonated switchably. The munition would track its rotational position and thus would be capable of introducing vibrational energy into specific portions of the frontus which increase the surface area transiently. This increase in surface area induced phononically results in increased drag during the guidance phase and allows for a munition to be steered without fins.

In form factors as large as an artillery shell, GPS may be used to facilitate guidance, something which is less feasible in smaller munitions such as .50 caliber rounds, which were the initially intended platform for the concept. Although the ability to accurately place sniper rounds over distances of up to seven miles provides some benefit, artillery is proving to be far more critical than previously thought.

Conclusion

The ability to accurately deliver artillery over enhanced ranges confers many tactical and strategic benefits and can be achieved with extant technologies at enhanced but not onerous cost. As artillery shells can not, at present, be shot down, they are a better investment than cruise missiles.